

Capstone for Impact Submission | GY2020

Project Title: Characterizing the Preventable Emergency Department Visit after Bariatric Surgery

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Branch: Procedure-Based Care

Path of Excellence: Patient Safety/Quality Improvement/Complex Systems

Summary: In this study, we identified patients with preventable ED visits by excluding those presenting with life-threatening symptoms or need for inpatient treatment. When comparing to a matched control group, patients with preventable ED visits had a higher rate of wound complications and urinary tract infections. However, rates of severe complications and reoperations were very low and did not differ. Risk factors among patients who are likely to incur a preventable ED visit included postoperative electrolyte abnormality, leukocytosis, and/or an anxiolytic prescription at discharge as well as a history of ED visits prior to surgery. As the rate of bariatric procedures increases, it will be important to reduce the number of preventable ED visits in order to minimize inappropriate health-care spending and improve patient satisfaction. Our study provides a data-driven approach to identifying patients at risk for preventable ED utilization after bariatric surgery and can be targeted for more frequent follow-up and triaged appropriately for clinic evaluation that can address low acuity complications.

Methodology: We identified 131 patients who underwent primary bariatric surgery at a single-center academic institution between 2006-2016, who also presented to the ED within 30 days of surgery. Preventable ED visits were identified by excluding patients with life-threatening presentations and/or use of emergent ED-specific resources. Patients with preventable ED visits were matched 1:1 to controls (no ED visit) based on procedure type and preoperative patient characteristics. Independent risk factors among patients with preventable ED visits were identified.

Results: A total of 80 patients (61%) were identified as having a preventable ED visit after bariatric surgery. After multivariable logistic regression, independent risk factors associated with preventable ED visits included: anxiolytic prescription at discharge [OR 5.42 (1.58-18.58); $p=0.007$], electrolyte abnormalities [OR 4.31 (1.94-9.60); $p<0.0001$] and leukocytosis [OR 2.23 (1.01-4.93); $p=0.048$] at discharge, and the number of ED visits preoperatively [OR 2.03 (1.34-3.06); $p=0.001$]. Severe complications, reoperation rates, and 1-year patient reported outcomes did not differ between patients with preventable ED visits and their matched cohort.

Conclusion: Preventable ED visits are common after bariatric surgery and are associated with risk factors that can be identified perioperatively. Identifying and triaging patients at risk for preventable ED visits may decrease unnecessary and costly visits to the ED after bariatric surgery.

Reflection/Impact Statement: Ideally, patients at high risk for preventable ED visits can be identified in the postoperative setting and triaged in a non-urgent environment in order to avoid inappropriate

resource utilization of the ED. Alternative settings for postoperative management of patients include traditional clinic visits, urgent care visits, as well as direct messaging and the use of telemedicine. Clinic alternatives have the potential to reduce 13.7-27.1% of all ED visits and decrease healthcare spending by \$4.4 billion annually. Further, telemedicine has already demonstrated promise for reducing preventable ED visits in bariatric surgery patients. These types of patient-facing interactions are not only less resource-intensive but have yielded higher patient satisfaction scores in bariatric surgery and other surgical specialties. Our study identifies criteria that can help bariatric surgery programs to identify patients at risk for presenting to the ED after bariatric surgery with complaints which could have been otherwise addressed in an alternative setting. Although further validation and site-specific modification of these criteria may be needed, our data provides a scaffold for future analysis specific to the bariatric surgery population.